



Connection Creation Metrics Report

James Madison University Collegiate Wind Competition 2023

Connection Creation Team

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Recruitment Plan Outcomes

MaxVentus was composed of twenty team members for the 2022-2023 Competition Year. The majority were seniors (13) along with three first-years, one sophomore, and three juniors. James Madison University (JMU) is a Predominantly White Institution (PWI) with a student population that is 59% female and 75% white. MaxVentus leadership is 66% female and 33% Hispanic and the team is 75% white and 35% female, making for a team that is racially and ethnically more diverse than the campus as a whole. Recruitment efforts enabled the team to grow from 13 members in August 2022 to 20 by September 2022, and team members reflect eight different majors and eight different minors hailing from five different colleges on campus. Efforts to recruit outside of engineering resulted in the successful recruitment of students from the following majors: Biology, Business Management, Communication Studies, Computer Science, Geographic Science, Integrated Sciences & Technology, and Sociology.

Recruitment took place mainly at the start of the Fall Semester and we tabled at both Fall and Spring Student Org Nights. The affiliated student organization, Sustainable Innovations Club (SIC), gained more than 70 members interested in learning more about sustainability and renewable energy. As stated in our Outreach Plan, advertisements for the team and club were placed in the campus newsletter, *Dukes Weekly*, and were posted on social media. We would consider our recruitment efforts a success as we increased the diversity of majors from six to eight and were able to recruit more underclassmen. While we did reach out to other student organizations whose members may have interests relevant to the CWC, for next year we recommend that the team increase these outreach efforts and that they promote the team through the environmental minors on campus as this will reach a broad and diverse group of students who may be interested in the competition.

Social Media

We had originally planned on running Instagram, LinkedIn, Facebook, and TikTok accounts for the team, but decided against the Facebook and TikTok accounts due to team member availability for maintaining these accounts, as well as because we anticipated that the audiences we intended to reach would not be effectively contacted through these channels. Our main social media account utilized was [@maxventus.jmu](#) on Instagram, posting just over 1.5 times per week between October 27, 2022 and May 3, 2023. Accounting for school breaks, we reached our goal of posting twice per week outlined in our Outreach Plan. Content posted fell into either educational (five posts), promotional (38 posts), or recruitment (one post) categories, as identified in our Outreach Plan. Our Instagram account grew from 146 to 210 followers, reaching 678 accounts during the last 90 days, and receiving a total of 1203 likes and 107 comments. Our [LinkedIn account](#) grew from 0 to 21 followers, posting 11 times with a total number of 129 likes and reactions, and more than 1,000 impressions. All LinkedIn posts fell into the promotional category. Most recruitment content was posted on the affiliated student organization's Instagram account, [@sicjmu](#), with 105 followers and 29 posts. Five posts were for recruitment purposes bringing the total to six posts falling in the recruitment category. And, in line with our Outreach Plan goals, we are working to complete a takeover of the JMU official Instagram account during our time in Boulder, in order to continue to spread the word about MaxVentus and the CWC. Please note that metrics do not account for story post engagement, but stories were a consistent posting mechanism utilized by the team. We also plan to continue posting to the accounts in the next few weeks, uploading content about team prototype testing, the competition in Boulder, and any final placement results.

Interviews

In addition to the four interviews completed as part of the *Understanding the Wind Industry* Deliverable, MaxVentus spoke with 15 other industry professionals from various sectors of the wind and renewable energy industry for a total of nineteen industry connections. Industry connections provided valuable insight into developing concepts for clean hydrogen production (see Project Development (PD) report), helped guide financial analyses, provided suggestions for how to address challenges the PD team encountered such as transmission system design, and provided exposure to the wide variety of roles available in the wind industry and renewable energy field as a whole.

A full list of industry connections made along with team attendance during meetings with each:

Name	Position/Company	Attendance
Zachary Batts	Green Fuels Technology Manager at Apex Clean Energy	5
Chett Chiaspn	Executive Director at Port Fourchon	3
Ryan Henning	Vice President Environmental at Apex Clean Energy	10
Matt Kellam	Manager of Workforce Development & Planning at Dominion Energy	3
Ralph Kurth	Senior Principal at Stantec	2
Michael Lasek	Project Manager at Scout Clean Energy	6
Lacy McManus	Executive Director of Future Energy	3
Margarita Patria	Principal at Charles River Associates	2
Will Payne*	Managing Partner at Coalfield Strategies	1
David Ponsa	Director of Vortex Fdc Inc	2
Alexander Reumert	Project Associate at European Energy A/S	4
Samuel Rodriguez*	Project Manager of Port Construction at Dominion Energy	3
Robert Sherwin	Managing Partner at EAPC Wind Energy Services	1
Colton Sorrells	Project Manager at Scout Clean Energy	6
Lourdes Spurlock*	Project Engineer at Apex Clean Energy	15
Jeremy Stefek*	Environmental Engineering and Workforce Impacts Researcher at NREL	1
Tyson Utt	Commonwealth Energy Partners	8
Haley Walter	Honors Attorney at EPA	10
Richard Wright	Commonwealth Energy Partners	8

**Featured in our Understanding the Wind Industry Deliverable*

Outreach Events

MaxVentus hosted 12 outreach events and received three additional media mentions. We outlined three target audiences in our Outreach Plan, JMU students, regional K-12 students and educators, and community members, and hosted or volunteered at five events targeting the JMU community, five targeting K-12 students and educators, and four targeting the larger Harrisonburg and Rockingham County community.

I. JMU Community

For JMU Community Outreach we have presented at two student org nights, presented at two engineering capstone showcases, decorated the JMU Spirit Rock, and facilitated meetings for the Sustainable Innovation Club (SIC). Only two members were permitted to present at each student org night, so two members presented at the Fall 2022 Student Org Night, and two presented at the Spring 2023 Student Org Night, reaching over 750 students in total.

Nine members of the team presented at the Engineering Major Capstone Showcase to approximately 100 first-year engineering students. This enabled the team to conduct educational outreach about the CWC and wind energy as well as continue recruitment efforts. Nine team members also presented at the JMU Engineering Madison xChange, an annual showcase of student capstone projects. MaxVentus team members presented to more than 100 students, families, and faculty members about their work on the Prototype Turbine Design and Testing Contests.

Four team members collaborated to paint the JMU Spirit Rock, a fixture on campus meant to represent the JMU community and the diverse activities in which the community partakes. It is a popular way for student organizations to raise awareness on campus. Later, the rest of the team was able to add their signatures to the rock; the finished product is featured as a post on our Instagram account. More than 500 students walk past the rock each day.

Additionally, four team members facilitated meetings of the SIC, a student organization that was launched by last year's CWC team, to support this year's team's fundraising efforts as well as to increase student awareness and involvement with renewable energy and other sustainable innovations. There are 76 students in the club GroupMe and 11 meetings were held over the course of the year. There were four meetings at which industry professionals connected with students, including the CWC team, and there were four fundraisers hosted by the club.

II. K-12

For our K-12 Outreach, we completed two classroom visit days, helped to host two statewide competitions, and volunteered at one local STEM event. Two team members visited Smithland Elementary School to assist with the climate and energy-themed fifth-grade SOL exam this year. Members facilitated an energy education game and read two books about sustainable energy with three classes. Five team members visited three sixth-grade classes at Skyline Middle School to facilitate a lesson on wind energy and assist students with a wind-powered car project. We reached a total of between 90 and 105 students and two educators through these visits.

Eleven team members volunteered at the Virginia-D.C. Region First Lego League Challenge Championship over the course of two days. MaxVentus hosted a clean energy booth with educational activities, including an interactive model turbine. More than 400 students attended and the team was able to speak with more than fifty families and educators, as well as a local high school robotics team, about wind energy, the KidWind Challenge, and the CWC. Sixteen team members volunteered with the Virginia State KidWind Challenge. Team members assisted with set-up and take-down, as well as by running wind tunnel testing, facilitating instant challenges, assisting with score compilation, and presenting to students on post-K-12 opportunities such as the CWC.

Seven team members volunteered at the Valley Mall STEM Day where the team ran an energy carnival attended by more than 500 families. Team members connected with local community members and other collegiate volunteers by running five different energy-themed games that educated players about wind, solar, and other sustainable energy sources, as well as a game featuring different sustainable actions that participants could take in their everyday lives.

III. Larger Surrounding Community

Our larger surrounding community outreach efforts included volunteering at a local energy festival, attending a wind energy conference, and receiving three media features. Seven team members volunteered at the Rocktown Energy Festival in Harrisonburg, VA, reaching approximately 300

Shenandoah Valley residents. MaxVentus assisted with set-up, organizing vendors, assisting with attendee navigation, facilitating speaker panels, and with event promotion and clean-up.

Eight team members attended the Distributed Wind Energy Association (DWEA) Conference in Arlington, VA. MaxVentus presented research done as part of the CWC to five other collegiate teams participating in a distributed wind energy research program sponsored by FedEx and REpowering Schools. Team members also participated in a poster session that reached more than fifty industry professionals, and assisted with the facilitation of a workshop on expanding awareness of renewable energy on college campuses. One team member also served on a panel discussing student involvement and preparedness for careers in wind energy.

Our prototype design and testing sub-team, comprising nine team members, was featured in the WINDSday Newsletter. The newsletter discusses wind energy and the environment, focusing on the Hampton Roads and Virginia Beach localities. One team member was interviewed for the feature and received a special shoutout in the newsletter. Because of a lack of access to the newsletter's metrics, we are unable to provide the number of impressions the article received.

All twenty MaxVentus team members were featured in individual Merit Press Releases which were sent to each team member's local media outlets based on postal codes. Press releases for our members reached outlets all over Virginia and in Maryland. A Merit Press Release featuring the team as a whole was also sent out upon qualification for Phase Two of the CWC. As with the WINDSday Newsletter, we are unable to provide metrics for these press releases because of a lack of access to data.

IV. Final Outreach Event Reflections

In the K-12 category, we completed two out of the three events originally planned as part of our Outreach Plan. We were unable to host on-campus tours of the JMU renewable energy facilities because we were unable to coordinate a whole-team training with the JMU Center for the Advancement of Sustainable Energy, which is responsible for giving these tours. MaxVentus was able to surpass our goal of 70 student impressions, reaching more than 900 students and educators through our outreach events.

As for JMU outreach events, we executed all planned events except for a team feature in the campus newspaper, *The Breeze*, and a collaboration with a prominent JMU Instagram account. We plan to pitch MaxVentus' upcoming attendance at the CWC in Boulder to *The Breeze* in hopes that we will be featured in the paper post-competition. Additionally, we have applied to complete an Instagram takeover of the official JMU account and are waiting to learn if we were accepted to host a takeover during the week of the CWC in Boulder. We also surpassed our outreach goals for this category, aiming for 500 student impressions and reaching more than 1,500 JMU student impressions.

We did not complete two of the community-targeted events outlined in the Outreach Plan deliverable: a farmer's market booth and an environmental community service event. The Rocktown Energy Festival was hosted alongside the Harrisonburg Farmers Market and received visitors who were regulars at the Farmers Market. Because of this, we concluded that a Farmers Market booth would not reach a large number of additional community members, so we did not pursue this event. The team did try to coordinate to complete community service events; however, due to scheduling conflicts, an event did not end up occurring. Team members participated separately in a multitude of community service events, but since these were not planned by MaxVentus or not attended by multiple members of the team at the same time we did not include these actions as part of our Outreach Event metrics. In total more than 375 community members were reached through our community-targeted events, reaching our goal of between 200 and 500 impressions.

We consider MaxVentus' outreach activities a success. We surpassed our total impression goal of between 770 and 1,070 impressions reaching more than 2,775 people through these events, and all team members volunteered at least once at an event during the course of the semester.